19 January 2024

Upgraded JORC Mineral Resource for the Highway Nickel Deposit

HIGHLIGHTS:

- The total (Indicated and Inferred) JORC 2012 Mineral Resource Estimate is now 16.5 Mt @ 0.407 % Ni for a total of 67,005t of nickel metal.
- Infill drilling for the resource was completed in September 2022.
- Mantle Minerals remains focused on the Robert's Hill and Mt Berghaus gold exploration tenements immediately north of De Grey Mining's (ASX:DEG) 12.5 million ounce Hemi gold deposit.

Mantle Minerals Ltd (ASX:MTL; "Mantle" or "the Company") is pleased to announce an upgrade to the Mineral Resource Category at the Highway Deposit, within the **Pardoo Ni-Cu Project**, located in the Pilbara region of northern Western Australia. The upgrade follows an infill drilling program completed in September 2022. See Figures 1 and 2 below.

Although Mantle is pleased with the JORC resource at Pardoo, the Company remains focused on exploring for gold at Roberts Hill and Mt Berghaus, immediately north of the 12.5-million-ounce gold discovery at Hemi. Any further work at Pardoo will be limited to identifying new nickel deposits from geophysical anomalies in the area.

Resource Category	Tonnes	Ni %	Cu %	Co %	Ni Tonnes	Cu Tonnes
Indicated	11,063,500	0.407	0.117	0.032	45,028	12,944
Inferred	5,399,800	0.408	0.116	0.032	22,031	6,263
Total	16,463,300	0.407	0.117	0.032	67,005	19,208

Table 1 - Highway Deposit Mineral Resource Estimate at 0.300% Ni cutoff grade

All Mineral Resources are rounded to reflect that they are an estimation.
A topcut of 12,500 Ni ppm was applied. Numbers may not sum due to rounding.
MRE are reported above the -200 m RL. Only Fresh MRE are reported.

Mantle Minerals Limited Executive Chairman, Nick Poll, said:

"We are delighted to complete the Pardoo mineral resource estimate for a total of about 45,000t of nickel metal in the JORC (2012) Indicated Resource category."

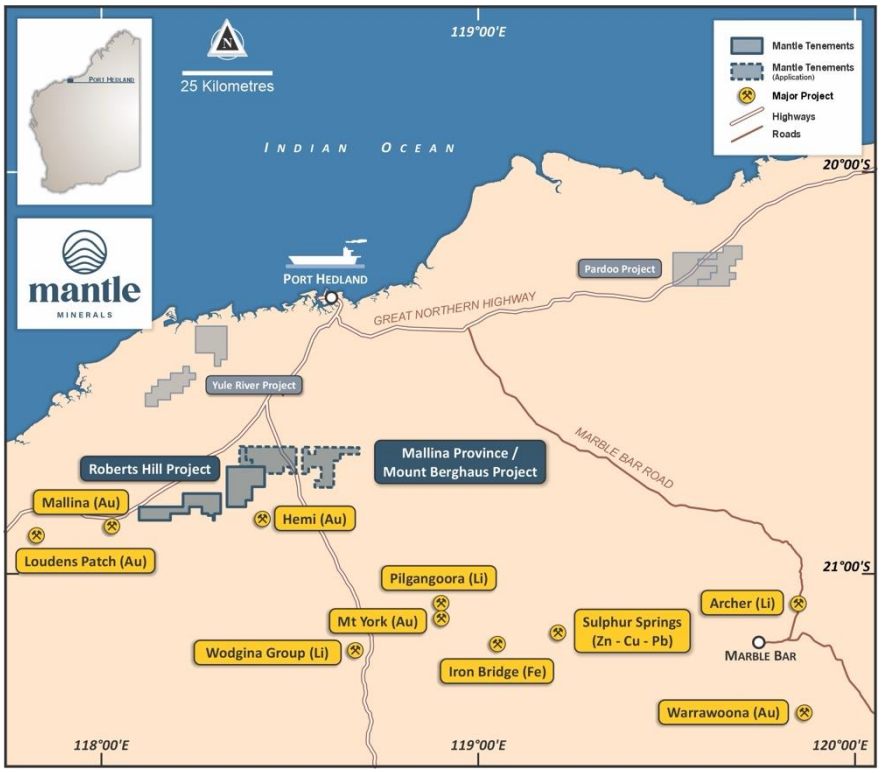

Figure 1 – Location of Pardoo Project to the East of Port Hedland

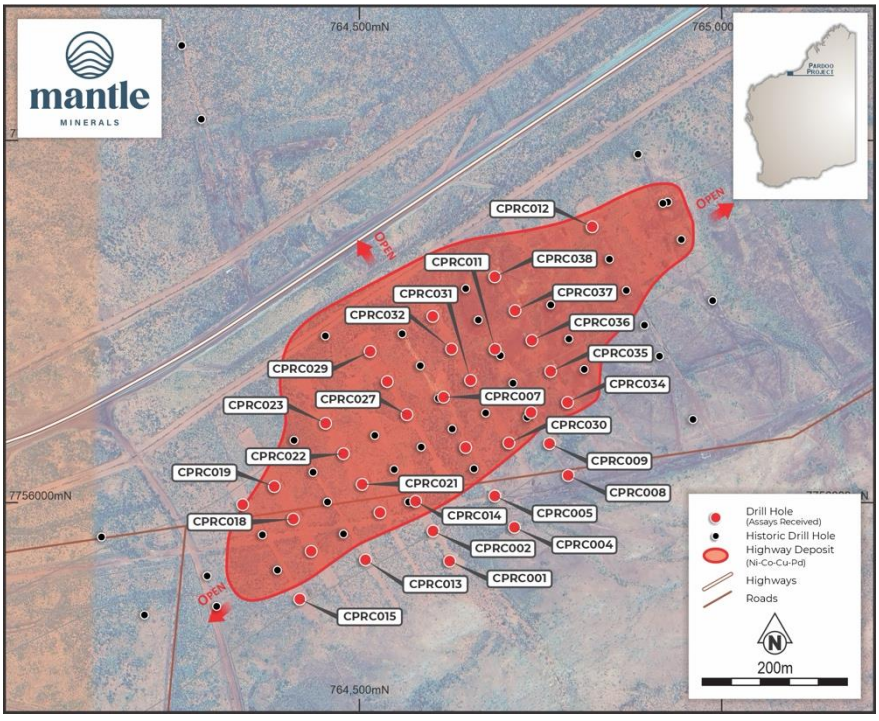

Figure 2 – Location of Infill Drilling to Define the New JORC (2012) Mineral Resource Estimate

Details

A 2010 Inferred category Mineral Resource estimate (the "Historic MRE") of 23.0Mt @ 4,100 Ni ppm (oxide, transitional, and fresh), was reported in March 2010 by Snowden Group, applying an economic cut-off grade of 3,000 Ni ppm and a depth restriction to 200 m RL. The 2010 MRE utilised 36 drillholes for 6,331m, inclusive of RC and diamond drillholes.

Additional drilling completed since the Historic MRE has increased the resolution of the drillholes to approximately 50 metres (m) along strike and has extended the down-dip nickel sulphide mineralisation. This has provided increased confidence in the deposit's geological and grade continuity, and an upgrade to the MRE categories. Seventy-eight (78) drillholes for 13,670m were utilised for the December 2023 MRE; inclusive of 69 Reverse Circulation (RC) drillholes for 10,980m and 9 Diamond drillholes for 2,690m.

In December 2023, an updated MRE (the "Current Estimate") for the Highway deposit was reported by independent mining consultant MEC Mining, in accordance with the JORC Code 2012. The total (Indicated and Inferred) MRE for the Current Estimate is 16.5 Mt @ 4,069 ppm Ni. This was calculated using an economic cut-off grade of 3,000 Ni ppm and a depth restriction to 200 m RL, as per the Historic Estimate. The Current Estimate shows a 28% decrease in tonnage and a <1% decrease in grade as compared to the Historic Estimate, which is due to the Historic Estimate including both fresh and oxide tonnage, whilst the Current Estimate considered only fresh material. Figure 2 shows the Highway Deposit MRE block model colour coded for Mineral Resource Category.

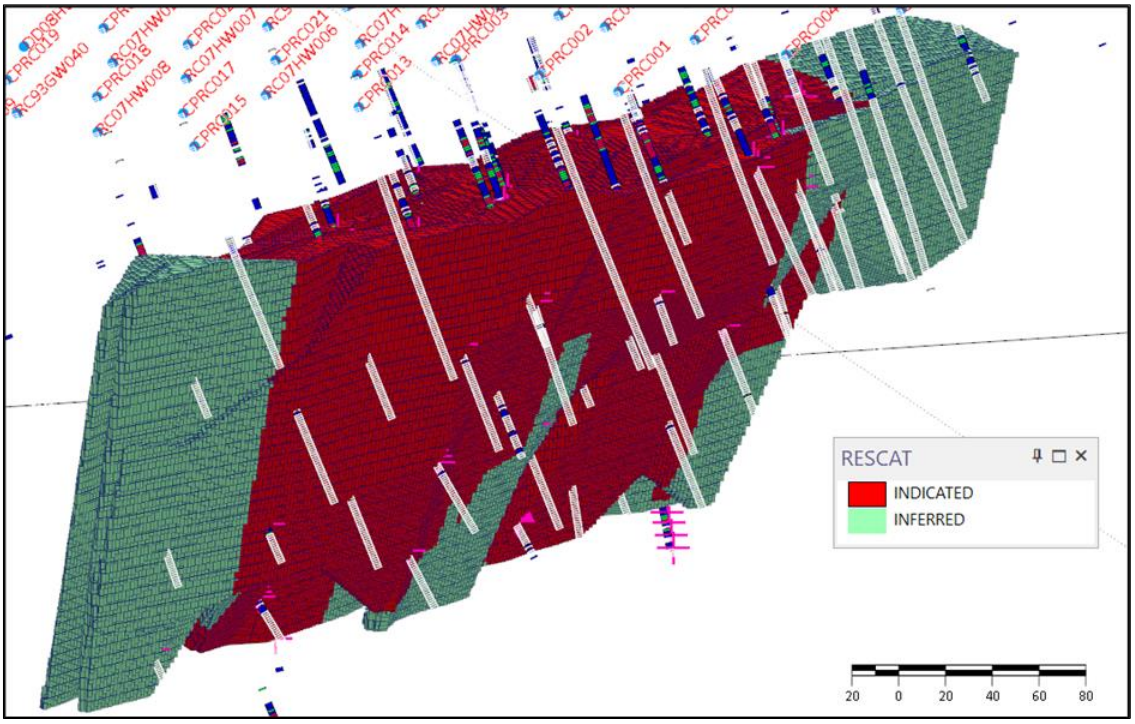

Figure 2 - Highway Deposit MRE block model colour coded for Mineral Resource Category

The grade tonnage curve for the MRE above the -200 m RL level is shown in Figure 3.

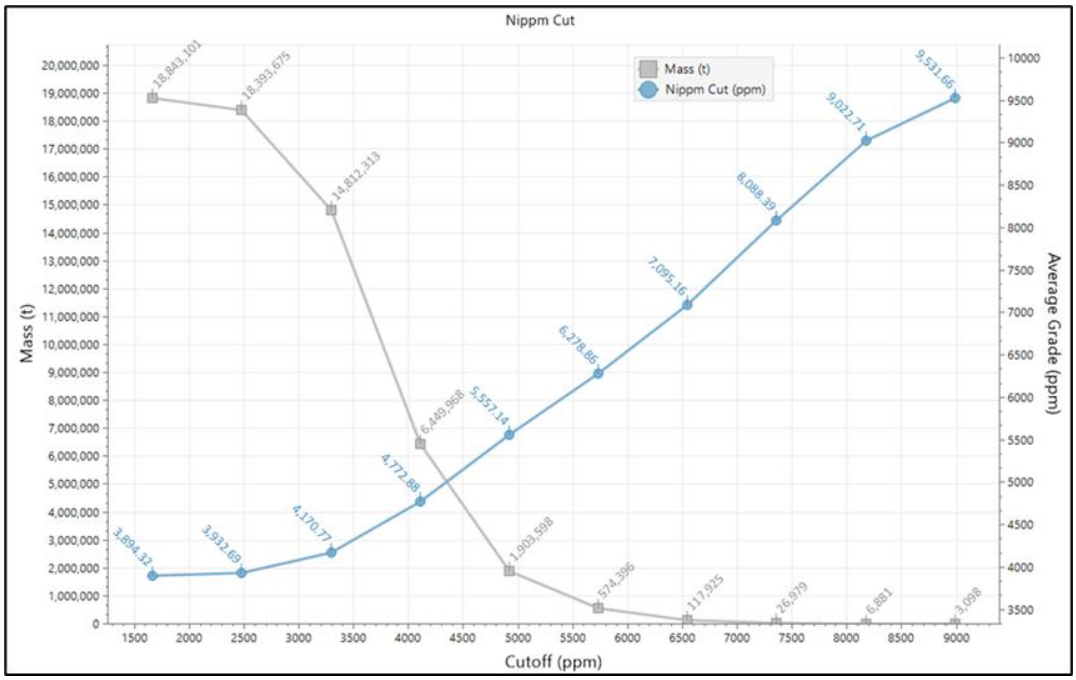

Figure 3 - Grade tonnage curve for the December 2023 MRE above the -200 m RL level

Example cross sections of the mineralised lodes of the Highway Deposit are provided in Figure 4 and Figure 5.

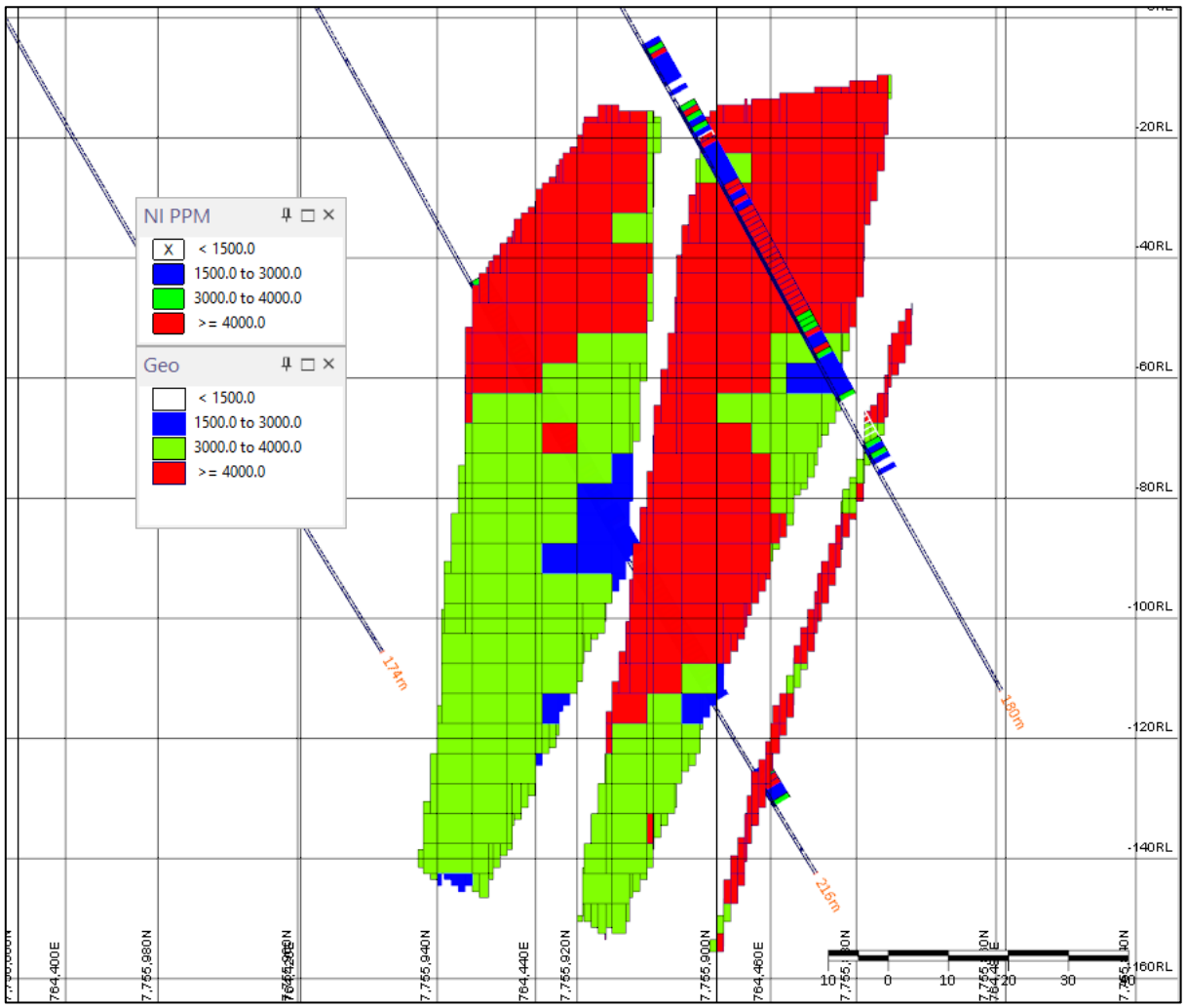

Figure 4 – Cross section looking North at the main lodes of the Highway Deposit

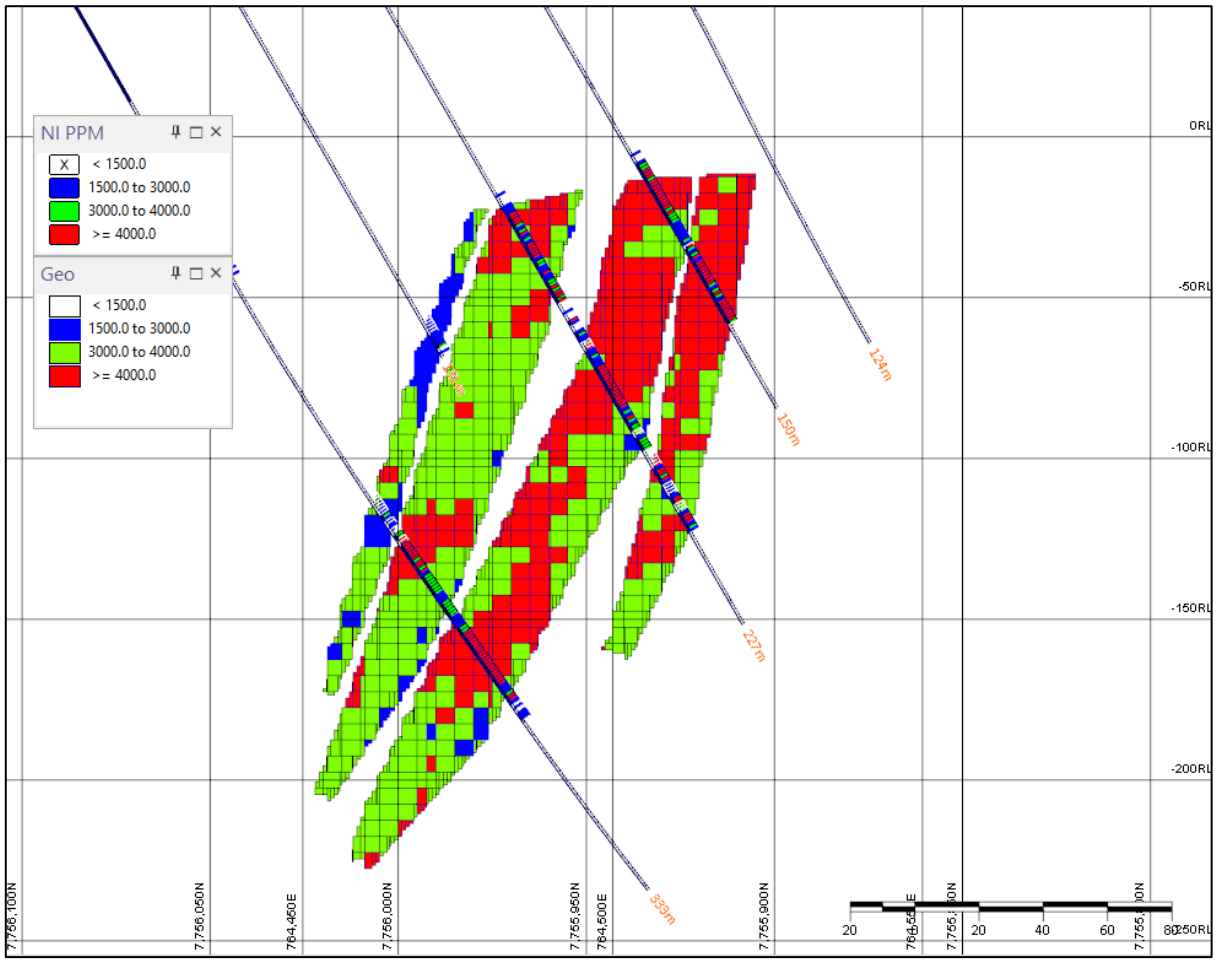

Figure 5 - Cross section looking North at the main lodes of the Highway Deposit

Clause 20 of the JORC (2012) Code requires that all reports of Mineral Resources must have reasonable prospects for eventual economic extraction (RPEEE), regardless of the classification of the resource. As such, a depth restriction was applied to report Mineral Resources above the -200 m RL level, which equates to a depth from surface of approximately 250m. This was to apply an opencut mining scenario for economic extraction, which is a reasonable assumption based on the following:

- The main Highway lode occurs close to surface and will be amenable to opencut mining to commence production.
- The Highway Mineral Resource occurs within a prolific Nickel region, there is strong nearology, and extensive infrastructure.

The depth is an approximation, a pit optimisation study may take a pit shell deeper and include additional Mineral Resources.
Further details pertaining to the MRE can be found in the JORC Table 1 provided at the end of this release.

Background

The Pardoo Nickel Project comprises tenements E45/5827 and E45/4671, which are approximately 120km East of Port Hedland, Western Australia. The Highway nickel copper sulphide deposit lies within the Pardoo shear. CRA Exploration Pty Ltd (CRAE, now Rio Tinto Ltd) first identified the project's potential in 1991 after highly anomalous values of nickel and copper mineralisation were confirmed from extensive regional scale exploration.

Structural remobilisation is considered an important control aspect for high-grade Nickel in the mineralised systems at the Highway project. VMS Nickel mineralisation was developed as structurally controlled, subvertically plunging, disseminated and semi-massive sulphide shoots, further influenced by faulting and shearing.

Next Steps

Summary of geological recommendations, from MRE Report for reference:

- The primary recommendation is to target drilling downdip and along strike where the Mineral Resource remains open.
- The January 2024 MRE demonstrated good geometry and continuity of lodes. The overall Indicated Mineral Resources may be increased by obtaining further density data and infill drilling, along with supporting QAQC data.
- The depth restriction applied to address the RPEEE hurdle may be tested with pit optimisation. The inclusion of oxide and transitional MRE would also impact the pit optimisation. The inclusion of secondary elements that may have a credit value would also push any pit shell to greater depth.
- Further metallurgical test work and study work is required to confirm process recoveries, projects costs, and other metrics that may allow determination of an economic cut-off grade to state the Mineral Resource estimate, as opposed to application of peer project economic cut-off grade. This work should also consider further potential credit commodities such as copper and cobalt, and the impact of any potential deleterious elements. Peer projects reviewed for comparison include Panoramic Resources' Savannah Project (formerly Sally Malay) in the Kimberley region of northern WA, where the mineral resource cut-off grade is 0.5% Ni (Ni only).

This announcement has been authorised for release by the Mantle Minerals Limited Board of Directors.

For Further Information, please contact:

Nick Poll
Executive Chairman
+61 8 6102 2656

Johnathon Busing
Non-Executive Director/Company Secretary
+61 8 6155 8858

Competent Person Statement

The information in this report that relates to Exploration Results and Mineral Resources is based on information compiled by Mr. Dean O'Keefe and Mr. Michael Atkinson.
Mr. Atkinson is a full-time employee of MEC Mining. He is a Member of the Australian Institute of Geoscientists and has sufficient experience relevant to the styles of mineralisation and types of deposits under consideration and to the activities currently being undertaken to qualify as a Competent Person(s) as defined in the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves and consents to the inclusion of this information in the form and context in which it appears in this report.
Mr. O'Keefe has over 34 years' experience in mining business development, and exploration/mining, with over ten years in operational roles in mines. Mr. O'Keefe was Consulting Group Manager of a global consulting company for over 15 years. Mr. O'Keefe is Principal Advisor for MEC Mining. Mr. O'Keefe is a qualified geologist, geostatistician, and Quarry Manager (WA Quarry Managers Certificate of Competency #488). Mr. O'Keefe is a Fellow of The Australasian Institute of Mining and Metallurgy (AusIMM, #112948) and has been involved in, or signed off on, more than 150 mineral or mining assessments to local and International standards.

Forward-Looking Statement Disclaimer

This announcement contains forward-looking statements that involve a number of risks and uncertainties. These forward-looking statements are expressed in good faith and believed to have a reasonable basis. These statements reflect current expectations, intentions, or strategies regarding the future and assumptions based on currently available information. Should one or more of the risks or uncertainties materialize, or should underlying assumptions prove incorrect, actual results may vary from the expectations, intentions, and strategies described in this announcement. No obligation is assumed to update forward-looking statements if these beliefs, opinions, and estimates should change or to reflect other future developments.

References

- ASX Release: "*Phase two RC drilling results confirm extensive nickel-copper mineralisation at the Pardoo Nickel Sulphide Project*" dated 20 January 2023
- Annual Report: "*Annual report for the financial year ended 30 June 2023*", Mantle Minerals Ltd, June 2023

JORC Code, 2012 Edition - Table 1

Section 1: Sampling Techniques and Data

(Criteria in this section apply to all sections of this announcement.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sounds, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report.* • *In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.*	Mantle RC • Mantle sampling was undertaken using standard industry practices including the use of duplicates, standards, and blanks at regular intervals. • Mantle Reverse Circulation (RC) Drilling Samples are taken at 1m intervals using the primary cyclone split calico bags. Samples were taken from each hole due to the nature of the program being a resource definition. • Sample weight approximately 1.5-2kg each to ensure total preparation at the laboratory preparation stage. The sample size is deemed appropriate for the grain size of the material being sampled. • All coordinates are in GDA94 Z50 and drillhole collars have been surveyed by Rocketmine using a Topcon Hiper II RTK GNSS base and rover kit to ensure accuracy of within +/-0.5m. • Samples were sent to ALS laboratories in Perth for Ultra Trace Multi-Element analysis (ME-MS61) & Platinum Group Metals analysis (PGM-ICP23). A 25g & 30g charge after sample preparation is digested by 4-acid digest and lead fire assayed with an ICP-AES finish to deliver trace level analytes for regolith-bedrock mineralization. Historic RC • Reverse Circulation (RC) Drilling Historic Sampling of historic RC drilling were taken at 1m intervals and 2-5m composite using the primary cyclone split calico bags. Sample size was not reported. • Samples were sent to different laboratories during the project life span and. Sample preparation and analysis also varies (Refer to WAMEX reports for further details). Diamond Drilling (DD) Historic • Sampling of historic DD drilling were taken at various intervals between 0.3m to 1.5m, but mainly at 1m intervals whether it was Half Core or full Core. Sample sizes were not reported in previous WAMEX Reports.

Criteria	JORC Code explanation	Commentary
Drilling techniques	• *Drill type (e.g. core, reverse circulation, open- hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit, or other type, whether core is oriented and if so, by what method, etc.).*	
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	• Diamond drillhole core sample recovery data is provided for 1,114m with recovered linear metres of 1,113.2m for average recovery of 99.9%. This population is sufficient to be representative for the diamond drillhole core and is an acceptable result. • Recovery data for RC drillhole cuttings samples were absent prior to 2022. Nevertheless, during the 2022 RC drilling camping the recovery condition was noted in the logging sheet, information regarding the condition of bag recovery was documented. Out of a total of 4,285 samples, 4,182 samples demonstrated good recovery (98%), while 103 samples displayed bad recovery (2%).
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.* • *The total length and percentage of the relevant intersections logged.*	Mantle • All geological, structural and alteration related observations are stored in the database following logging on field Panasonic Toughbook GF-31. • Logging has been completed by a suitably qualified and experienced field geologists. • RC drillhole data and samples have been used in the Mineral Resource estimation study. • All Geological logging is qualitative in nature. Historic • Historic logging from the WAMEX was completed by different companies using different logging codes and is considered unreliable. Mantle has commenced a Geochemistry study to investigate the geochemical characteristics of the Highway Nickel deposit.

Criteria	JORC Code explanation	Commentary
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.* • *For all sample types, the nature, quality, and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *Measures taken to ensure that the sampling is representative of the in-situ material collected including for instance results for field, duplicate/second-half sampling.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• 1m samples were split using a rig mounted rotary splitter and placed into uniquely numbered bags. • The sample size of ~2.5kg is appropriate to the style of mineralization. • Duplicate samples (field duplicates) were collected at drill site, 1 in every 40 samples. • A separate sample is sieved from the splitter reject material into chip trays and used for geological logging
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* • *Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.*	Mantle • 1m RC sample analysis was undertaken by ALS Laboratories using super–Trace Multi-Elements Analysis (Me-MS61) & Platinum Group Metals analysis (PGM-ICP23). • An internal certified laboratory QAQC was undertaken including check samples, blanks, and internal standards. This methodology is considered appropriate for base and precious metal mineralization at the resource definition phase. Historic • No Assay testing methods were recorded before 2007 • In 2007, Segue completed 2 diamond drillholes that were half core sampled and were sent for analysis to Kalassay Group via 4 acid digest and ICP-OES analysis and ICP-5. 32 RC holes that were 1m sampled by riffle split and bagged were then sent to Kalassay Group in Perth for testing via 4 acid digest and ICP-OES analysis for 9 elements by ICP-9 method. Additional Au/Pt/Pd were determined by aqua regia with an ICPMS finish (by method ICPMS_3) and fire assay fusion with a ICPMS finish (process FAF1 MS03). • In 2014 one diamond drill hole was completed. A 3m composite quarter cut sample

Criteria	JORC Code explanation	Commentary
		analysis was completed by ALS laboratories using 4 acid digests via ICP-AES (ALS codes- PREP-22 & ME-ICP61).
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage* • *(physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	Mantle • Samples were verified by geologists before importing into the main database (Datashed). • Several historical twin holes have been drilled by Mantle during this program to validate the historical work undertaken by previous explorers for Mineral Resources QAQC. • Field data is collected using a standard set of templates. Geological samples logging is undertaken on a Panasonic Toughbook with structure, alteration and lithology recorded for each interval. Data is verified before loading to the database. Geological logging of all samples was undertaken.
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control*	• All maps and locations of drillholes are in UTM grid (GDA94 Z50) and have been surveyed with accuracy of +/- .5m or by hand-held GPS with an accuracy of +/-3m.
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* • *Whether sample compositing has been applied.*	Mantle • 100-50 m infill drill hole spacing were used to complete the 1st and 2nd phases of resource drilling and wider spaced testing of step out targets. These locations were all determined from geochemical, geophysical, and geological data together with any historical drilling information. For the reported drilling, the drillhole grid spacing was approximately 100m x 50m. • 1m primary samples were submitted for analysis of all drillholes. No composite sampling was undertaken. Historic • CRA Exploration initially drilled by using a 400m-200m exploration drilling in 1992. Subsequent infill drilling to outline the prospect was completed on a 800m by 50m-75m spacing.

Criteria	JORC Code explanation	Commentary
		• In 2007 Segue completed an infill drilling program. The spacing of the infill drilling ranges from 100m-50m by 100m-50m spacing.
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	• Drilling is designed to cross the geochemical feature of interest as close to perpendicular as possible. All drill holes are designed at a dip of 60 degrees to intersect as orthogonal as possible, with the orebody dipping at ~50-60 degrees to the north. • No orientation-based sampling bias can be confirmed at this time. Drillhole mineralization is estimated to be within 75-100% of the true widths. Additionally, all wireframes were constructed in 3d and represent true widths.
Sample security	• *The measures taken to ensure sample security.*	Mantle • Chain of custody was managed by Mantle staff. Drill samples are stored on site and transported by a licensed reputable transport company to a registered laboratory in Perth (ALS Wangara). When at the laboratory, samples are stored in a locked yard before being processed and tracked through the ALS Webtrieve System. Historic • The chain of custody of historic drilling cannot be tracked down due to the long life of the project.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• MEC completed an audit of the Highway project data in December of 2022. The MEC recommendations were adopted by Mantle, including a requirement for additional sample recovery and density data.

Section 2: Reporting of Exploration Results

(Criteria in this section apply to all sections of this announcement.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	• The Highway Ni-Cu-Co-Pd deposit is situated on E45/5827 and is located approximately 120 km East of Port Hedland in the Pilbara Region of WA. The tenement is 100% owned by Mantle Minerals through its wholly owned subsidiary Port Exploration Pty Ltd. • MEC Mining has confirmed that currently the tenement is in good standing, and no known impediments exist.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• The Pardoo region has been explored by several different companies since the late 1980's. <u>CRA Exploration Pty Ltd (CRAE) 1988-1995</u> During 1988-1995 CRAE undertook detailed ground magnetic surveys, ground geophysical IP and EM surveys, broad regional airborne EM surveys and limited follow-up diamond, RC and RAB drilling over a large area known as the Worthy Project. CRAE drilled 693 holes for 22,355m during their period of exploration. The drilling included 632 RAB holes for 10,910m, 42 RC holes for 6,400m, and 19 diamond drill holes for 5,045m. in 1992, further drill testing of identified GEOTEM anomalies, located several new areas of sulphides at the Highway prospect. SIROTEM was completed firstly over 400m then to 200m spaced lines. Drilling one conductor intersected a pyrite/pyrrhotite zone containing 113m at 0.31% Ni and 0.31% Cu. A second drillhole 100m away interacted 90m at 0.35% Ni and 0.14% Cu. Subsequent broad spaced drilling at the Highway prospect outlined an 800m long by 50-75m wide, disseminated nickel-copper sulphide deposit which at the time was considered uneconomic at the time, with the nickel price at ~$2,500 USD/ton. <u>Westralian 2004-2006</u> In October 2004 ground moving loop transient electromagnetic surveying (MLTEM)

Criteria	JORC Code explanation	Commentary
		was conducted on a 200m line spacing to locate and confirm discrete bedrock conductors associated with massive nickel sulphide mineralization. In June 2005 an airborne geophysical survey was flown to collect magnetic, radiometric, and elevation data over a large portion of the project area. Re-sampling revealed the presence of high-grade nickel sulphide in the mineralized system grading 5.58% nickel over a 0.5m interval at the Supply Well Prospect and 2.11% Ni over a 1m interval at the Highway Prospect. <u>Segue Resources Limited 2006-2007</u> Segue took control of the Pardoo Project from Westralian in October/November 2006. Work completed during this period including geophysical modelling of Westralian electromagnetic data, Helicopter-based VTEM surveys, diamond core drilling, RC drilling, density determinations, aeromagnetic surveying, ground TEM surveying and metallurgical test work. <u>Mithril Resources Limited JV 2007-2010</u> Mithril completed ground-based geophysics, downhole geophysics, diamond drilling (5 holes- 1,483m), re-assaying of historic sample pulps and specific gravity determinations. Additionally, Mithril conducted metallurgical and hydrometallurgical test work and completed a re-estimation of the Highway Ni deposit resource using Snowden in 2010.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• Structural remobilisation is a control aspect for high-grade Nickel in the mineralised systems at the Highway project. VMS Nickel mineralisation was developed as structurally controlled, subvertically plunging, disseminated and semi-massive sulphide shoots. Highway is a disseminated and semi-massive sulphide deposit type. The Highway deposit mineralisation is further influenced by faulting and shearing.

Criteria	JORC Code explanation	Commentary

Drill hole Information	• *A summary of all information material to the understanding of the exploration results*
	• *including a tabulation of the following information for all Material drill holes:*
	  • *easting and northing of the drill hole collar*
	  • *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar*
	  • *dip and azimuth of the hole*
	  • *down hole length and interception depth*
	  • *hole length.*
	• *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*
		• Significant intersections are reported in Error! Reference source not found..
		• Seventy-eight (78) drillholes for 13,670m were utilised for the December 2023 MRE. Inclusive of 69 Reverse Circulation (RC) drillholes for 10,980m and 9 Diamond drillholes for 2,690m. Drillhole depths range from 35m to 483.9m. The database was validated, and all errors were rectified prior to estimation.

Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.* • *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• Significant assay intervals are tabulated where required. A cutoff grade of 0.15% Ni was applied to all samples with a maximum internal waste of 4m. • Reported intervals and true sample averages based on 1m drill samples were analysed and no compositing was undertaken during sampling. • No metal equivalent has been reported. <u>Historic Data</u> • Mantle used a cutoff grade of 0.15% Ni to verify the previously reported significant intercepts.

Criteria	JORC Code explanation	Commentary
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').*	• All drillholes were designed at a dip/azimuth of 60°/150° to intersect as orthogonal as possible the orebody dipping at ~ 50-60° to the north west and striking ~055°. • Drillhole mineralization is estimated to be within 75-100% of the true width.
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	• Plan view map of drillhole collars and section lines is shown in **APPENDIX 2**, along with all drillhole cross sections, showing the drillhole grades and the OBM estimated grades.
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• All significant grades relevant to the MRE are reported in **APPENDIX 3,** using a grade trigger of NIPPM 1,500, maximum consecutive internal waste of 2m, maximum total internal waste of 4m, minimum grade of NIPPM 1,500.
Other substantive exploration data	• *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	• All material results have been applied to the MRE study, including metallurgical testwork, and density studies.

Criteria	JORC Code explanation	Commentary
Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• The MRE remains open at depth and along strike. The open extent of the resource should be drill tested to potentially allow expansion of the Mineral Resource estimate.

Section 3: Estimation and Reporting of Mineral Resources

(Criteria in this section apply to all sections of this announcement.)

Criteria	JORC Code explanation	Commentary
Database integrity	• *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.* • *Data validation procedures used.*	• The database is contained in Micromine software. The collar file, downhole survey file, and the interval files were added to the database, which cannot be saved if it has validation issues. All validation issues between files were resolved prior to creating the database file. • Validation tools in the software were used to validate the data, checking for missing intervals, hole IDs, or intervals exceeding total depth. • 3,333 assays are in the database above the 1,500 Ni ppm geological cut-off grade within the wireframes. 14,339 assays are in the database below the 1,500 Ni ppm geological cut-off grade. • Seventy-eight (78) drillholes for 13,670m were utilised for the December 2023 MRE. Inclusive of 69 Reverse Circulation (RC) drillholes for 10,980m and 9 Diamond drillholes for 2,690m. Drillhole depths range from 35m to 483.9m.
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case.*	• A site visit to the Highway project was conducted by MEC Mining Geology Manager and Geologist, Mr Michael Atkinson, the Competent Person Mineral Resources (“CP”), on the 13th of February 2023. • The findings of the CP were consistent with the supplied project data. The CP observed the completed drillhole collars and sample bags. The CP checked the collar survey of several drillholes , these were found to be in the correct position, with maximum variance of around 5m. The CP observed no historic production at the project site.

Criteria	JORC Code explanation	Commentary
Geological interpretation	• *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* • *Nature of the data used and of any assumptions made.* • *The effect, if any, of alternative interpretations on Mineral Resource estimation.* • *The use of geology in guiding and controlling Mineral Resource estimation.* • *The factors affecting continuity both of grade and geology.*	• An implicit model was created in the Leapfrog software using logged lithology and known ages of lithologies to set precedence. • A lithological model was built for Highway using the Leapfrog software by Mantle consultants, this was then amended by MEC. The model was a representation of the understanding of the geology of the deposit. The exported model was used to guide the sectional interpretation of the deposit to create an explicit model. Most structures were internal, such as folding and there were no significant structures that resulted in dislocation of the ore lodes. • There are 4 lodes which strike at ~50° azimuth, and dip 70° to the west, with a shallow plunge. All interpretation was snapped to the drillholes in 3D. Interpretation was conducted in section. The interpreted lodes were wireframed to create mineralised envelopes that were then used to constrain the block model. • The lode geometry and continuity is strong. • The Geological cut-off used to differentiate mineralised material from weakly mineralised material was 1,500 ppm Ni. A minimum of two intervals were used for the interpretation of the mineralised envelope, with maximum total internal waste of two metres included, providing the minimum composite grade was ≥1,500 ppm Ni. • During geological modelling using Micromine software the strings were extrapolated to half the section spacing, and a shorter distance at the base of the deposit. The wireframes were extrapolated to half the section spacing and, in some instances then scaled to 90% of the original.
Dimensions	• *The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.*	• There are 4 parallel loads in close proximity that make up the mineralised envelope. • The dimensions of this envelope are approximately 700m along strike, 190m down dip and 120m across strike.

<table>
<tr><th>Criteria</th><th>JORC Code explanation</th><th>Commentary</th></tr>
<tr><td>Estimation and modelling techniques</td><td>

The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.
The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.
The assumptions made regarding recovery of by-products.
Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).
In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.
Any assumptions behind modelling of selective mining units.
Any assumptions about correlation between variables.
Description of how the geological interpretation was used to control the resource estimates.
Discussion of basis for using or not using grade cutting or capping.
The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.

</td><td>

All estimation was completed using Micromine software.
The drill hole spacing along strike is approximately 50 metres (m), and down dip is highly variable, ranging from ~43m to ~90m. All blocks within the block model were restricted to the wireframe solids. The parent block size was 10m east, by 10m north, and 5m in elevation. Parent cells were sub-blocked to 1m east, by 2m north, and 1m in elevation.
Only those grades within the lodes were used to interpolate lode grades, using ordinary block kriging, with discretisation of 2 x 2 x 2 to partially address change of support issues. Negative kriging weights were reset to zero. Only parent cells were estimated, and the grade defaulted to the subcells within the parent cell.
Interpolation used only the grades within the wireframes to populate the block model. Grades were composited to 1m intervals which was the dominant sample interval length, prior to interpolation.
The CP has no information on the potential credit value of Cu and Co
The CP has no information regarding any potential deleterious elements.
The Ni ppm grade was top-cut to 12,500 Ni ppm to moderate extreme grades for estimation. A total of 14 assays were cut, including the maximum grade of 20,500 Ni ppm.
Experimental semivariograms were modelled for Ni with geometric anisotropy as per the following parameters, using a spherical model with two components:

<table>
<tr><th>AZIMUTH</th><th>PLUNGE</th><th>NUGGET</th><th>PARTIAL SILL 1</th><th>PARTIAL SILL 2</th><th>PS1 RANGE m</th><th>PS2 RANGE m</th></tr>
<tr><td>50</td><td>0</td><td>1,200,000</td><td>2,144,117</td><td>1,150,400</td><td>20.0</td><td>120.5</td></tr>
<tr><td>320</td><td>50</td><td>1,200,000</td><td>2,144,117</td><td>1,150,400</td><td>22.0</td><td>53.0</td></tr>
<tr><td>140</td><td>40</td><td>1,200,000</td><td>2,144,117</td><td>1,150,400</td><td>6.0</td><td>17.0</td></tr>
</table>

Search ellipse parameters are provided below. Sectors were used to decluster data on the fly.

</td></tr>
</table>

Criteria	JORC Code explanation	Commentary

RUN	MIN. HOLES	SECTORS	AZI 1	RADIUS m	AZI/ DIP	RADIUS m	AZI/ DIP	RADIUS m
1	3	1	50	100	320/-70	80	0/0	20
2	3	4	50	160	320/-70	80	0/0	32
3	0	4	0	400	0/0	400	0/0	400

- Mineral Resources (the "Historic Mineral resource") were estimated by Snowden Group in October 2010. All Mineral Resources were classified as Inferred Mineral Resources. A comparison between the Snowden estimate and the current 2023 MEC MRE is provided below. The changes are attributed to a significant amount of drilling completed in the intervening period resulting in an upgrade of the MRE categories from Inferred, to Inferred and Indicated. The 18% decrease in tonnage and ~1% decrease in grade when applying a 3,000 Ni ppm economic cut-off grade is attributed to:
    - The additional drilling.
    - Snowdens MRE included fresh and oxide tonnage, whilst at the instruction of Mantle, MEC considered only fresh material for the estimate.

Cut-off 3,000 Ni ppm	TONNAGE Mt	Ni ppm	Cu ppm	Co ppm	S %
MEC 2023	16.5	4,063	1,166	321	3.11
Snowdens 2010	23.0	4,100	1,300	300	3.18

- The MRE result was validated globally and locally.
    - Global validation result: wireframe tonnes 21,084,125Mt versus OBM 21,083,842Mt. The wireframe global grade at zero cut-off was 4,125 Ni ppm versus MRE 3,842 Ni ppm, the grade difference is due to data clustering in the wireframe which is less prominent in the block model. The global validation was acceptable to the CP.

    - Local validation was completed by comparing composite input assay data against estimated grades. There was a strong correlation with the estimated

Criteria	JORC Code explanation	Commentary
		grades honouring the input data. The local validation was acceptable. See **APPENDIX 2**. • No support correction was applied to allow for selective mining units at this stage of the project life.
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• Tonnages were established on a dry basis.
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	• The economic cut-off grade of 3,000 ppm Ni was applied to potential opencut Mineral Resources above the -200mRL level. The economic cut-off grade for Ni ppm was determined from peer projects. The -200mRL level is approximately 250m from surface. • Peer projects reviewed to determine an economic cutoff grade include Panoramic Resources' Savannah Project (formerly Sally Malay) in the Kimberley region of northern WA, where the mineral resource cut-off grade is 0.5% Ni (Ni only).
Mining factors or assumptions	• *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.*	• The CP considered the Reasonable Prospects for Eventual Economic Extraction (RPEEE) to exclude deeper material. A depth restriction was applied to report Mineral Resources above the -200 m RL level, which equates to a depth from surface of approximately 250m. This was to apply a potential opencut mining scenario for economic extraction. The depth is an approximation, a pit optimisation study may take a pit shell deeper and include additional Mineral Resources.

Criteria	JORC Code explanation	Commentary
Metallurgical factors or assumptions	• *The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.*	• A hydrometallurgical assessment and accompanying report was completed by CESL Limited on behalf of Mithril Resources in November 2009. (Mithril Resources Hydrometallurgical Assessment of Pardoo Nickel Project, CESL Limited, November 2009). • Nine leach tests were completed on Ni concentrate showing excellent nickel extraction throughout all tests, with optimal results achieved with a two-stage leach. The acid consumption was moderate; exhibiting potential to lower it, through solution recycles to the autoclave. • For the tests performed on the combined rougher concentrate, at 3.7% Ni and 1.1% Cu, nickel and copper extraction ranged from 95.3% to 97.6% and 79.7% to 97.9%, respectively, with sulphur oxidation ranging from 9% to 34%. For the test performed on the first rougher concentrate, at 5.7% Ni and 2.0% Cu, nickel and copper extractions were 99.4% and 98.7%, respectively, with a sulphur oxidation of 41%. • Preliminary testwork was insufficient to calculate economic recovery which requires process recovery, metal sale price, and cost information. As such an economic cut off was determined from peer projects that applied around 0.5% Ni economic cut off. 0.3% Ni was applied to the Highway project.
Environmental factors or assumptions	• *Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of*	• No environmental assumptions were made for the MRE. Scoping studies will assess these requirements in the future.

Criteria	JORC Code explanation	Commentary
	the environmental assumptions made.	
Bulk density	• *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.* • *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.* • *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	• Weathering surfaces were defined from drillhole logging. Three zones were determined, the oxide, transitional, and fresh zones. Only the fresh zone was modelled for the December 2023 MRE, at the request of Mantle. • Fifty-nine SG determinations were completed for the Fresh zone with SG ranging from 2.69 to 3.52 for an average of 3.07. Further densities were determined by ALS Pty Ltd in October 2023 using a pycnometer. 135 RC samples were tested. The density measurements to date are acceptable to the CP for tonnage estimation. For the purpose of the MRE the SG values have been treated as relative density values for the determination of MRE tonnage. • The December 2023 MRE used 179 SG values in the ore lodes and fresh zone, values ranged from 2.68 to 4.72 with average value of 2.985. • The 2010 MRE used default densities of 3.00 t/m3 in the fresh zone and 2.65 t/m3 in the oxide zone.
Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories.* • *Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).* • *Whether the result appropriately reflects the Competent Person's view of the deposit.*	• The lode geometry and continuity are strong. The veracity of the underlying QAQC data is acceptable to the CP. The drillhole spacing along the deposit strike is approximately 50m, and down dip it is highly variable ranging from approximately 43 - 90m. The Mineral Resources were classified as both Indicated and Inferred category Mineral Resources. The classification was based upon spacing using a search ellipse to establish Indicated Mineral Resources using a minimum of three drillholes with ellipse dimensions of 50m down dip, 50m along strike, and 50m across strike. After the blocks were informed, all islands were then tidied up manually, to create discrete classified areas. The remaining blocks were assigned an Inferred Mineral Resource category as the distance in three dimensions was acceptable to denote as Inferred classified Mineral Resources as opposed to unclassified Mineral Resources. • The result reflects the Competent Persons view of the deposit.

<table>
<tr><th>Criteria</th><th>JORC Code explanation</th><th>Commentary</th></tr>
<tr><td>Audits or reviews.</td><td>• The results of any audits or reviews of Mineral Resource estimates.</td><td>• An audit of all exploration work contributing to the Mineral Resource estimate was conducted by MEC in December of 2022.
• This audit identified areas to be addressed, such as a requirement for additional density measurements, a requirement for umpire assays to check for laboratory baseline difference, and further sample recovery data. These deficiencies were addressed following the audit.
• The recommendations from the audit were adopted by the Mantle Minerals staff and the MRE was completed in December of 2023.</td></tr>
<tr><td>Discussion of relative accuracy/ confidence</td><td>• Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.
• The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.
• These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</td><td>• OBM wireframe validation, All:
<table>
<tr><th>MRE cut-off grade</th><th>Volume m^3</th><th>DENSITY (t/m^3)</th><th>TONNES (t)</th><th>Ni ppm Cut</th><th>Co ppm</th><th>Cu ppm</th></tr>
<tr><td>MRE, 1,500 Ni ppm cut-off</td><td>6,503,600</td><td>2.89</td><td>18,843,100</td><td>3,894</td><td>314</td><td>1,163</td></tr>
<tr><td>MRE, 3,000 Ni ppm cut-off</td><td>5,682,800</td><td>2.89</td><td>16,463,300</td><td>4,069</td><td>320</td><td>1,166</td></tr>
</table>
• The MRE result was validated globally and locally. The global validation result was wireframe tonnes 21,084,125Mt versus OBM 21,083,842Mt. The wireframe global grade at zero cut-off was 4,125 Ni ppm versus MRE 3,842 Ni ppm, the grade difference is due to data clustering in the wireframe which is less prominent in the block model. The global validation was acceptable.
• The local validation was completed by comparing the composite input assay grades against the estimated grades. There was a strong correlation with the estimated grades honouring the input data.
• There has been no production at the Highway project.</td></tr>
</table>